Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

DISCUSSION OF FIRE ADMINISTRATION

CLEMENT J. DRISCOLL
Bureau of Municipal Research

As Commissioner Adamson has clearly stated, New York's fire department has within the last few years advanced to a higher point of efficiency than ever before attained. The officials of the department have made the scientific training of the men an essential part of their program. They have likewise developed a system of fire prevention inspections through the use of civilian inspectors and uniformed firemen, and have secured the enforcement of the department's orders by protecting it against political interference. In these respects the fire departments of other American cities have not been so progressive.

In New York, however, and in most American cities there remains to be solved a problem of administration vital from the point of view of both efficiency and economy. That question, which puzzles most administrators of fire departments, concerns the hours of labor of firemen and the distribution of the force so as to secure the best results. In a word, the great question is, what shall be done with firemen during the many hours they are not called upon to perform active work?

All over the country fire departments and those interested in them are to-day discussing the question of platoon systems. Most of those who have studied the situation are agreed that the present so-called continuous-service or single-platoon system is unfair to the fireman and far from satisfactory. Most fire chiefs are opposed to any change from the present continuous-service system principally because of the increased cost of management that must necessarily come with a change of platoon system. They likewise argue that by having the firemen constantly under their control, and housed under the barracks system, they can secure better service. Nevertheless, the firemen of America who are working under the single-platoon system are discontented, and their discontentment is not conducive to efficient service. It was once said in connection with police, and with a great deal of wisdom, that "a contented force is an efficient force."

Those who argue for a continuance of the present system contend that its justice lies primarily in the fact that the firemen are for the most part idle, and are called into action only occasionally. This is true, but in this very fact may be found the great problem of fire administration. During the year 1913 the 289 companies of New York's fire department responded to 14,737 alarms, which means that each company averaged far less than one run per day (.14 run per day). During the same year, as against 14,737 alarms, there were but 12,958 fires. Some idea of the amount of actual service performed by the department during 1913 can be had from the following table:

The highest number of runs for any one company was 791.
The lowest number of runs for any one company was 1.
111 companies responded to less than 100 (less than .27 alarms per day).
61 companies responded to between 100 and 199 (.27 and .54 alarms per day).
58 companies responded to between 200 and 299 (between .54 and .81 alarms per day).
34 companies responded to between 300 and 399 (between .81 and 1.08 alarms per day).
11 companies responded to between 400 and 499 (between 1.08 and 1.36 alarms per day).
10 companies responded to between 500 and 599 (between 1.36 and 1.63 alarms per day).
1 company responded to between 600 and 699 (between 1.63 and 1.90 alarms per day).
3 companies responded to between 700 and 791 (between 1.90 and 2.17 alarms per day).

Although I have given considerable study to the question I am not prepared to say that the two-platoon system advocated by the firemen throughout the country would if adopted give the relief necessary. Yet I do say without hesitation that some system must be devised which will permit of more time at home for firemen, and more time for recreation.

But with better working conditions as to hours of service must come a system which will provide for securing a greater amount of active service from the firemen, and which will make impossible entire companies remaining inactive for a whole year without responding to alarms.

I have at this time no concrete plan to offer, but I believe that the following plan, suggested by Fireman John R. Keefe, of New York's department, though by no means perfect in detail, is yet worthy of consideration, and should unquestionably be experimented with in some section of the city.

Plan of Organization by John R. Keefe

Divide New York city into 16 districts, each district to contain 15 or 16 companies, engine and truck. Centrally located in each such district is to be a quarters containing 1 battalion chief (to be in charge), 2 foremen (captains) and 18 men. These groups, for purposes of explanation, will be called district crews. In each such district will be 3 fast automobiles, each capable of accommodating 10 men, with one or two scaling ladders and extinguishers if desired. The apparatus and quarters now in use should not be disturbed in the slightest and companies should answer alarms as at present, but the crews should be reduced from their present number (average 16) to a minimum strength at all times of 1 lieutenant, 1 engineer, and 3 firemen for each engine company, and 1 lieutentant and 3 firemen for each truck and hose company.

In responding to alarms these otherwise undermanned companies will be augmented by a captain and 10 men, in 2 automobiles, from district quarters, making the actual strength of the 4 companies (the usual number that respond on the fire alarm) never less than 30 officers and men, with a captain of the district crew in charge. The district crew is certain to get to a fire before a company could get water on even as now manned. In the night, when most large fires occur, these figures would be increased from four to eight men. There would remain in district quarters a minimum crew of 1 battalion chief, one captain and 8 men to respond to a second alarm from the same fire or a first alarm from another part of the same district. When extraordinary occasions require, the process of locating now in practise can be extended to district crews.

The number of companies in each district and the number of districts in the city can, of course, be changed as required; those given are tentative, but seem to originator of plan about right. While New York city is large, if it were only one-sixteenth its present size the central part of it would be no very great distance from the border.

Take the territory from Tenth street to the Harlem River and from Fifth avenue to the East River and divide it into 2 districts, one from Tenth street to Seventieth street, and the other from Seventieth street to the Harlem River. Locate district crews at Fortieth street and Third avenue, and One Hundredth street and Park avenue, and no point north or south is more than 1½ miles distant, a matter of 3 minutes with an automobile having right of way, and much less east and west. Moreover, by no means all fires would be on the extreme edge of the district. A district crew station at Forty-first street and Sixth avenue could easily cover all the territory from Twenty-third street to Fifty-ninth street from river to river.

Statistics show that about 99% of the department is idle twenty-three hours out of twenty-four, and never in its history has 20% of the department's strength been busy at the same time at fires; not even for an hour.

During 1909 there were 13,559 alarms responded to in New York city, 1,122 of these were false or unnecessary. Of the remainder:
7,629 were extinguished without water.
3,316 were extinguished with 1 engine stream.
768 were extinguished with 2 or 3 engine streams.
512 were extinguished with high pressure on first alarm.
212 were second, third or fourth alarm (153 were seconds).

The problem to be solved is, how to have enough men and apparatus in the required place at the right time without overmanning the department, how to utilize the largest possible amount of energy at command. One hundred and fifty men and ten pieces of apparatus would be more than sufficient for New York if it were known in advance where a fire was going to break out. Only recently between the hours of 8 a.m. one day and 8 a.m. the next, the working day for firemen, not a single alarm was received. New York city did not need a fire department on that particular day.

There may be only 15 or 20 companies out of 237 in New York city which roll during some stated period; probably only one or two, perhaps none at all, of these actually perform fire duty on the alarm they answer. In 1909, 8% of alarms were false or unnecessary, and 88% (10,945 to be exact) of all fires in New York were extinguished by one company, and 70% of these without water. That a second or greater alarm in a district would be a comparatively rare occurrence, though not generally thought so, is apparent from the fact that only 212 occurred in all New York in 1909; an average of 13 for each of the proposed 16 districts. Some would really have none, some more than their share. The average, however, is only about one a month per district.

It should be borne in mind that some companies do not respond to an alarm for days and even weeks; instead of keeping 16 men idle, only 7 at the outside would be idle under this plan. There are at least 50 companies in New York city that do not average 20 runs a month; these companies are now manned by 800 men. Instead of having 800 men idle when there are no fires to put out, under this plan there would be an extreme of only 350 idle. It should be remembered, too, that when these companies respond and do not work, 7 men to a company are as good as 16 and also, a company does not work at more than 20% of the one-alarm fires it rolls to.

A district of 15 companies of 16 officers and men each, with 10 engines and 5 trucks, makes 240 officers and men. The same companies with district crews make 148 officers and men. (This includes minimum strength of 91 and reserve of 57 to keep companies fully manned). At any time when none are working only 148 are idle, instead of 240. At a one-alarm fire in a given district at least 30 respond and not more than 118 are idle on "day off" or at meals under this plan. Under the present system, in the same district, with the same fire, probably less than 30 would be working and at least 210 would be idle on "day off" or at meals.

Even if three alarms came simultaneously in one district, an unheard-of and well-nigh impossible occurrence, the district crew could readily handle them by sending 3 crews of 7 men each to the three points in the district from which alarms were received.

Most fires are extinguished with one apparatus and crew; all companies in excess are ordered back to quarters. Six of the district crew can return at once to quarters in these cases, thus increasing the reserve at district quarters to 16, if no alarm has been received in the interval, and to 9 if a second crew has left district quarters before the first returned. The second crew would have been 6 men and a captain, leaving a battalion chief and two men in district quarters as the lowest possible number. With a perfected and modern fire-alarm telegraph system, such as New York city will have, and a series of special calls arranged, crews can be summoned from one station (alarm) to another without returning to quarters if the occasion requires, and the probability of district quarters being depleted is thus reduced to the lowest possible minimum. When it is considered that there were but 13,550 alarms in 1909, an average of less than 850 for each of the 16 districts (slightly more than two a day), it is readily seen how extremely improbable of occurrence are the contingencies just cited.

Occasionally a fire, while requiring only 1 apparatus, may need perhaps 15 or 20 men. Under the present system of operating, to get 20 men at least 3 crews are required. This means that 2 pieces of apparatus are unnecessarily out of service, and some part of the city, which should not be, is unprotected. Under this plan you can have 1 apparatus and 20 to 40 men if required.

For emergencies, in case of a wreck, sewer disaster, collapsed building, explosion, or other calamity, unaccompanied by fire, when men and not apparatus are wanted, a large draft of skilled men can be quickly made without putting a single apparatus out of service or materially affecting the protection of the city in case of fire.

Lessening the weight of apparatus from 500 to 800 pounds, by means of smaller company crews, would make a difference in the speed of horses and would be very noticeable in a long run in answer to a second or third alarm, or if the streets are heavy with snow or slush.

At no time in recent years, if ever, have there been three large fires in

New York city at the same time; and two large fires at one time have not occurred in New York city a dozen times in its history.

In addition to the great saving in money, better fire protection than is now afforded would be given.

At the recent explosion at Fiftieth street and Lexington avenue, apparatus not in use was lying around out of service, as was and is necessary to get the men. This actually decreased the fire protection of the city. Nothing like that would happen under this plan. Each district would be in charge of a battalion chief, who would have 1 captain, 8 lieutenants, 6 engineers and 42 men in excess of the number required to man companies. This is a very liberal allowance to provide for days off, sick leave, meals, *etc.*, and will keep companies up to minimum requirements under any condition, and will largely exceed those requirements at night. What are known as "three-meal" men quite frequently do not get them; a "one" or "two-meal" man fares no better. For a long time officers in the department have been practically living in quarters, getting only such meals as they send out for or can snatch "between times." Under this plan the officers and men would be better treated in the matter of getting their days off and meals than ever before.

While it is realized that no men could be forced out of the department, no additions to the force would be necessary for the next ten years. The deaths and retirements, which average 150 a year, would reduce the force 1,500 men in ten years. Allowing for the natural increase in the city the requirements ten years hence would be covered by the allowance for 1911 (4,508).

A great saving in the pension fund would also be accomplished, and the large income in excess of the requirements of the fund could be used as a basis for a pension fund for civil employes of New York city not now provided for. At the present time the fire department, police department, health department and school teachers have a pension fund. These constitute more than 80% of the city employes and it seems hardly fair that 20% should be left out when private corporations and railroads are pensioning faithful employes.

The facts stated and the probable or possible conditions mentioned are designed to show how much enforced idleness there now is, and must necessarily be, in the fire departments of all large cities as at present operated. To reduce this idleness to the lowest possible percentage when there is nothing to do, and to utilize the greatest possible percentage of the force when there is something to do, is the purpose of this plan.

Comparison of Cost under Existing and under Proposed Plan

Positions.	Allowance for 1911		Required under new plan	
	No.	Cost	No.	Cost
Chiefs	1	$10,000	1	$15,000
Deputy Chiefs	15	66,300	.	......
Battalion Chiefs	47	155,000	24	79,200
Foremen	268	670,000	48	120,000
Assistant Foremen	371	779,100	400	840,000
Engineers	446	713,600	292	467,200
Firemen (Av. $1,300)	3,360	4,368,000	1,799	2,338,700
Totals	4,508	$6,762 ,00	2,564	$3,860,100

Distribution Under New Plan

	Chief	Battal-ion Chiets	Cap-tains	Lieu-tenants	Engi-neers	Fire-men	Totals
165 Engineering Companies	..	..	..	165	165	495	825
74 Trucks	..	..	..	74	..	222	296
8 Hose	..	..	..	8	..	24	32
10 Boats	..	..	..	20	30	100	150
16 District Crews	..	16	32	..	..	288	336
Reserve	1	8	16	133	97	670	925
Totals	1	24	48	400	292	1,799	2,564